

**EMISSIONS INSPECTION AND MAINTENANCE SUMMIT
WHITE PAPER
OCTOBER 27, 2005**

(Note: Bolded words and phrases in the body of the document are defined on pages 13-14.)

Purpose of the Emissions Inspection and Maintenance Summit and White Paper

The purpose of the Emissions Inspection and Maintenance (I/M) Summit, held in the summer of 2005, was to bring the St. Louis community together to consider and build consensus for a redesign of the vehicle emissions I/M program in St. Louis. (Vehicle emissions inspection and maintenance programs are commonly referred to as “emissions I/M programs.”) The current emissions I/M program is operated under a contract that expires September 1, 2007. This happens to roughly coincide with the date the State Implementation Plan (SIP) is due to the Environmental Protection Agency (EPA) to address St. Louis’ noncompliance with the 8-hour ozone standard.

Although the contract ends in 2007, the statutory authorization for the current emissions I/M program does not sunset. Therefore, changing the design of the next vehicle emissions I/M program requires legislation. In order to keep within the timeframes for SIP submittal, legislation must be passed during the 2006 session.

This white paper documents the Emissions I/M Summit discussions and the opinions of participants regarding emissions I/M program design elements. The Emissions I/M Summit stakeholders prepared this document to aid the Missouri General Assembly in its deliberations on emissions I/M legislation in the 2006 session.

Emissions I/M Summit Participants

The Missouri Department of Natural Resources (hereinafter the “department”) coordinated the Summit. Invited participants included: members of the Missouri General Assembly who had sponsored or cosponsored legislation related to I/M in the 2005 session; federal, state and local agencies; community members; the automotive sales and service industry, and public health and environmental groups. A complete list of invitees and attendees by meeting will be provided with the final release of the white paper.

Emissions I/M Summit Process

The East-West Gateway Council of Governments hosted four Emissions I/M Summit meetings on July 22, August 5, August 19, and September 1, 2005. The department provided an agenda to each attendee in advance. The department also provided meeting minutes to each attendee prior to each subsequent meeting. The first two meetings focused on information sharing about St. Louis air quality and the various I/M options. The third and fourth meetings focused on the group’s opinions regarding the key elements of the next emissions I/M program.

Informal, non-tallied votes were taken to gauge the various stakeholders’ positions on how the next I/M contract should be designed and to promote discussion about the various options. Green, yellow and red voting cards were used to indicate a participant’s support, reservation, or opposition to each I/M design concept discussed. A consensus was reached if the participants

voted with all green or all red cards. A majority and a minority consensus were reached if participants voted with a mix of green, yellow, and red cards with a green majority and a red minority. A consensus was not reached if the participants voted with an equal mix of green, yellow, and red cards without a clear majority in any one color.

Emissions I/M Summit Presentations

The department maintains an Emissions I/M Summit webpage with the following information for each of the four Emissions I/M Summit meetings: 1) Meeting Agendas; 2) Presentations; 3) Supporting Information for presentations; and 4) Meeting Minutes. This information can be found at the following address:

<http://www.dnr.mo.gov/alpd/apcp/sipworkgrp/sipgrpmain.htm#IM>

The East-West Gateway Council of Governments also maintains an Emissions I/M Summit webpage with similar information. That webpage has the following address:

<http://www.ewgateway.org/environment/aq/Ozone-SIP/ozone-sip.htm>

Air Quality Status in St. Louis

The current emissions I/M program, known as the Gateway Clean Air Program, is considered by many, including the EPA, to be one of the key strategies that helped the St. Louis area come into compliance with the **1-hour ozone standard**. At the end of the **ozone season** in 2002, the monitors in St. Louis recorded compliance with the 1-hour ozone standard. The department submitted a request for redesignation to the EPA in December 2002. The EPA approved the request, and St. Louis became a **maintenance area** under the 1-hour ozone standard. As part of the **maintenance plan**, the department committed to retain most of the pollution reduction strategies that were put in place to achieve the standard, including a vehicle emissions I/M program. However, the wording in the maintenance plan relating to the vehicle emissions I/M program was intentionally left general in order to take advantage of advancing testing technologies and methods and provide flexibility.

On April 15 2004, the EPA once again designated St. Louis as an ozone nonattainment area under the new, stricter **8-hour ozone standard**. The designation became effective on June 15, 2004. The city of St. Louis and the counties of St. Louis, St. Charles, Jefferson and Franklin comprise the St. Louis 8-hour ozone nonattainment area.

The effective date of the designation triggers two major milestones. The first milestone is the date the SIP for meeting the 8-hour ozone standard is due to the EPA, which is June 15, 2007. The second major milestone is the date by which the St. Louis area is required to come into compliance with the 8-hour ozone standard. Under the Clean Air Act, moderate ozone nonattainment areas are required to come into compliance 6 years after area designation. As a result, the St. Louis ozone nonattainment area must come into compliance by June 15, 2010 or face being “bumped up” to the next level of ozone **nonattainment classification** (in this case, the next level is “serious.”) Compliance is determined by the most recent three years of complete ozone season monitoring data. In other words, the area will need to achieve compliance using the 2007-2009 ozone monitoring period. (Since the compliance date is in the middle of the 2010 ozone season, the 2010 data cannot be used in determining compliance.)

Legal Requirement for Emissions I/M Program in the St. Louis Ozone Nonattainment Area
The Clean Air Act and federal regulations governing the 8-hour ozone standard require the St. Louis area to have a “basic” emissions I/M program.

Several factors play into answering the question of what the next emissions I/M program needs to look like. The two key technical factors influencing the design of the next emissions I/M program include:

- Changing demographics of the St. Louis area vehicle fleet. Older, higher-emitting vehicles are dropping out of the fleet and being replaced by newer, cleaner vehicles. However, “vehicle miles traveled” (VMT) has shown an increasing trend in the past several years that is expected to continue.
- Emissions testing technology is improving. The most significant change is the incorporation of On-Board Diagnostics, Generation II (**OBD II**.) All 1996 and newer vehicles are manufactured with the equipment necessary to use this test. OBD II shifts the focus of vehicle I/M from a reactive, pollution reduction mode, to a proactive, pollution prevention mode. Federal regulations require emissions I/M programs to conduct OBD testing on 1996 and newer vehicles.

Federal regulations require states with moderate ozone nonattainment areas to implement a vehicle emissions I/M program that meets or exceeds the Basic I/M Performance Standard. Federal regulations also require states that modify existing emissions I/M programs to determine if such modifications would decrease the effectiveness of the emissions I/M program. If there will be a decrease in effectiveness, states must submit a plan to EPA for making up the difference using other control measures. This is to prevent what is called “backsliding.” For example, if the design of the next emissions I/M program caused an additional ton of ozone-forming pollution to be emitted from motor vehicles, the state would then have to reduce an additional ton of ozone-forming pollution from another source of pollution, such as a factory or a particular type of industry located in the ozone nonattainment area.

A preliminary analysis of the consensus design from the Emissions I/M Summit participants indicates that the two legal requirements described above can be met. A more thorough analysis will be conducted and included in the final white paper.

Emissions I/M Program Design Elements

In the Emissions I/M Summit process, the emissions I/M program design elements were grouped into ten categories for ease of consideration. Each category is discussed here briefly. Additional detail on any of these categories is found on the Emissions I/M Summit Web pages.

1) Emissions I/M Program Test Methods

The Emissions I/M Summit participants discussed the on-board diagnostics (OBD), transient (IM240), idle and gas cap pressure test methods, and discussed the test methods that were possible for all possibly subject vehicles.

By federal requirement, OBD technology is installed on all 1996 and newer model year light duty (under 8,501 pounds Gross Vehicle Weight Rating)

gasoline-powered vehicles, as well as on all 1997 and newer model year light duty diesel powered vehicles. The OBD test method uses this technology to provide a quick, low-cost, fraud-resistant, state-of-the-art emissions test. Because of the numerous advantages of OBD testing over any other test method, there was a strong consensus that the OBD test should be used to test 1996 and newer light-duty gasoline-powered and 1997 and newer light-duty diesel-powered vehicles. Diesel vehicles are currently exempt from emissions I/M program requirements, but the participants felt that the emissions I/M program would be more equitable and more effective if both gasoline and diesel vehicles were subject to the emissions I/M requirements. Additionally, the consensus of the participants was that the state should build fraud prevention into the design of the next emissions I/M program to ensure OBD testing integrity.

There are two new OBD test delivery mechanisms under development by emissions I/M program vendors. The first OBD test delivery mechanism is a stand-alone OBD kiosk, similar to an Automatic Teller Machine. The OBD kiosk concept would allow motorists to conduct OBD testing at a convenient, unattended location 24 hours per day. The OBD kiosk concept was not supported by the participants. The second OBD test delivery mechanism is an OBD transponder that sends a signal to a network of receivers, similar to an automatic payment system available at certain gas stations and toll booths. The OBD transponder concept would allow the state to remotely collect emissions data from motorists that choose to have a transponder installed in their vehicle. Motorists choosing this option would be exempt from a regular test interval, provided they responded promptly if the vehicle developed an emissions-related problem. The OBD transponder concept was supported by the participants, provided it was strictly a voluntary option. There may be other OBD test delivery mechanisms developed in the future, and the consensus of the participants was that the General Assembly should not preclude the possibility of new OBD testing technologies from being incorporated into the next emissions I/M program.

The IM240 test is the quickest, most fraud-resistant, state-of-the-art emissions test for 1995 and older model year vehicles. However, there is a substantial cost of the purchasing, installing, and maintaining this IM240 test equipment, and the existing IM240 testing infrastructure is owned and operated by the current I/M contractor. Given that 1995 and older model year vehicles will be a diminishing portion of the St. Louis area fleet of vehicles beyond 2007, the majority consensus of the participants was that 1995 and older vehicles should be exempt from all tailpipe testing. The minority consensus of the participants was that 1995 and older vehicles emit more pollution than 1996 and newer model year vehicles and should not be exempt from IM240 tailpipe testing until the St. Louis area meets the eight-hour ozone standard and is reclassified as a maintenance area.

The consensus of the participants was that 1995 and older vehicles should not be exempt from all forms of emissions testing. The participants were in favor of incorporating the current gas cap pressure test into the statewide safety inspection

program. Additionally, the safety inspection program requires the failure of vehicles with leaking fuel and the failure of vehicles with missing emissions control components. Provided the safety test is conducted with electronic data reporting and sufficient auditing to meet EPA requirements, the state can continue to cost-effectively reduce emissions from 1995 and older vehicles. The Emissions I/M Summit participants were in favor of such an enhancement to the statewide safety program.

2) Emissions I/M Program Subject Model Years

The consensus of the Emissions I/M Summit participants was that 1996 and newer vehicles should continue to be emissions tested. There was a majority and minority consensus about the emissions testing of 1995 and older vehicles (see the Vehicle Emissions Test Methods Section).

The consensus of the participants was that the first two model years should continue to be exempt from the emissions I/M program, because these vehicles are under warranty and will have the highest likelihood of passing an emissions test. The majority consensus of the participants was that the first four model years should be exempt from the emissions I/M program. The minority consensus of the participants was that exempting vehicles from emissions testing for a duration of four years would not be fair to motorists who drive vehicles that are four or more years old, as these vehicles would be beyond warranty coverage and more likely to fail the emissions test. The Emissions I/M Summit participants did not discuss whether an exemption from the emissions inspection requirement for the first four model years would necessitate a similar exemption from the safety inspection requirement as well.

The participants did discuss exempting hybrid electric vehicles from the emissions inspection requirement. However, the consensus of the participants was that these vehicles can emit excess pollution just like any other type of vehicle, and therefore should be subject to the same emissions inspection requirements.

3) Emissions I/M Program Geographic Coverage

The Emissions I/M Summit participants discussed different ways to define the boundaries of the emissions I/M program. The discussion included defining the boundaries by arbitrary boundary (using either radial circles or straight lines drawn on a map), by population density (using census and other data to select the areas above a certain threshold of motorist density), by zip code (as is done in Illinois' emissions I/M program), by county boundary (as is currently done), and by the entire state.

The consensus of the participants was that the best and easiest boundary definition was by county boundary. The difficulty of implementing an emissions I/M using an arbitrary boundary, a population density threshold or a list of zip codes was a considerable deterrent to the selection of any of these methods. While there was a

majority consensus that the emissions inspection requirement should be statewide, the minority consensus was that such a drastic expansion of the emissions I/M program would undermine the chance of successfully redesigning the next emissions I/M program in the St. Louis ozone nonattainment area during the 2006 General Assembly. As a result, the consensus of the participants was that the emissions I/M program should have the same boundaries as the St. Louis ozone nonattainment area (the city of St. Louis and the counties of St. Louis, St. Charles, Jefferson and Franklin).

4) Emissions I/M Program Test Network

The Emissions I/M Summit participants discussed different ways to define the test network of the emissions I/M program. The discussion included centralized test-only (a small network of high-throughput stations), decentralized test-and-repair (a larger network of low-throughput stations), decentralized test-only (a larger network of high-throughput stations), and hybrid (some centralized test-only, decentralized test-and-repair, and decentralized test-only stations) network designs. This discussion included the possibility of recombining the safety inspection and emissions I/M programs.

The network design of emissions testing stations is a critical component in the customer convenience of an emissions I/M program. Currently, there is a network of 12 test-only, high-volume facilities that provide emissions testing services. The majority consensus of the participants was that the current centralized emissions testing network was not convenient, and that an OBD-only emissions I/M program for 1996 and newer light-duty gasoline and 1997 and newer light-duty diesel vehicles was more convenient if provided by a decentralized network such as the current network of safety inspection stations. The minority consensus of the participants was that a new decentralized emissions testing network would be risky to implement. The emissions I/M program prior to 2000 was decentralized. Many safety inspection stations may still be embittered by the change to a centralized emissions I/M program, so their interest in participating in the next emissions I/M program may be low. Additionally, repair facilities are in business to repair vehicles that fail inspections, not to test vehicles, so there isn't an economic incentive for repair facilities to risk providing low-volume emissions testing services for an indeterminate period of time.

After all of the discussion of the pros and cons of each test network design, the consensus of the participants was that the next emissions I/M program should be flexible enough to allow centralized test-only, decentralized test-and-repair, and decentralized test-only stations to compete on the open market. This hybrid approach would allow motorists to choose the testing provider that best met their convenience expectations. This hybrid approach would also allow testing providers to conduct emissions testing services corresponding to their own business plan, rather than through a business plan chosen by the state. The consensus of the participants was that the state should allow inspection stations to offer safety inspections only, emissions inspections only, or safety and emissions

inspections. Such an open market design would foster increased participation from potential safety inspection and emissions I/M vendors.

5) Emissions I/M Program Remote Sensing

The Emissions I/M Summit participants discussed the role of remote sensing in the next emissions I/M program. Remote sensing uses infrared and ultraviolet wavelengths projected across a single-lane roadway to unobtrusively measure the tailpipe emissions of passing vehicles. This technology can be used to identify clean-running vehicles (called clean screening), dirty-running vehicles (called dirty screening) or to collect information about the St. Louis vehicle fleet's emissions characteristics (called fleet analysis).

The majority consensus of the participants was that clean screening was not consistent with OBD testing, because the OBD system monitors engine components while the remote sensing technology measures tailpipe emissions. Due to the increased convenience of the recommended hybrid test network, the exemption of the first four model years (supported by a majority consensus), and the conflict between OBD and remote sensing test methods, the majority consensus of the participants was that clean screening did not need to be included in the next emissions I/M program design. The minority consensus of the participants was that clean screening was still a beneficial way to increase emissions I/M program convenience and should not be precluded. Should clean screening be included in the next emissions I/M program design, the consensus of the participants was that motorists should pay for that type of testing. The Emissions I/M Summit participants did not reach a decision about whether clean screening should cost the same as or less than the emissions inspection fee at test stations.

The Emissions I/M Summit participants discussed dirty screening as a way to increase the effectiveness of identifying vehicles with excess emissions in between scheduled inspections. The participants also discussed the problems of motorists avoiding the remote sensing devices to avoid dirty screen notices, the problems of requiring vehicles to be emissions tested and repaired between registrations, and the perception the public might have if a vehicle identified as emitting excess pollution then passes a confirmatory test. The participants did not reach a consensus on whether dirty screening should be incorporated into the next emissions I/M program design.

The Emissions I/M Summit participants discussed fleet analysis as a way to monitor the success of the next emissions I/M program. The consensus of the participants was that fleet analysis remote sensing should be included in the next emissions I/M program design.

6) Emissions I/M Program Waivers

The Emissions I/M Summit participants discussed the role of waivers in the next emissions I/M program. The possible waiver options included no waivers, cost

limit waivers, registration extensions, and limits on the number of waivers granted per vehicle. The possible waiver requirements included setting an appropriate cost minimum and specifying who can repair vehicles that fail emissions inspections.

The majority consensus of the participants was that the next emissions I/M program would need to have a waiver mechanism to offset the burden of high cost of repairs for some motorists. The minority consensus of the participants was that the OBD technology was designed to assist repair technicians in diagnosing and repairing vehicles accurately and cost-effectively, and that waivers for OBD vehicles discouraged complete vehicle repairs, thereby defeating the pollution prevention design of the OBD technology.

The consensus of the participants was that the next emissions I/M program should have a waiver mechanism that included consideration of the amount of money spent by a motorist. The participants also discussed the difficulties with choosing a dollar amount that minimized the number of waivers issued and accounted for the wide range of repair costs depending on the manufacturer and the reason for the failure. The Emissions I/M Summit participants discussed registration extensions and/or limiting the number of waivers per vehicle as alternatives to a cost-based waiver mechanism, but no consensus was reached regarding cost minimums, registration extensions or limiting the number of waivers per vehicle.

Specifying who can perform emissions repairs and whose labor costs should count towards an emissions waiver based on a spending minimum was a contentious issue for the Emissions I/M Summit participants, with many strong opinions expressed. While the participants agreed that an accurate diagnosis is essential to conducting cost-effective emissions repairs, some participants felt that not everyone has the continuing education, tools, or access to information to correctly diagnose the cause of an emissions inspection failure and complete the repairs.

The current emissions I/M program allows anyone to perform emissions repairs, but only the labor costs of Missouri Recognized Repair Technicians (MRRT) count towards a waiver. Anyone can apply to become a MRRT. The requirements for MRRTs are that they are employed full-time as a repair technician, that they have current Automotive Service Excellence (ASE) certification in Electrical/Electronic Systems (A6), Engine Performance (A8), and Advanced Engine Performance (L1), that they take one four-hour course on the emissions I/M program, and that they take a minimum of four hours per calendar year of continuing education on emissions-related repairs.

After much discussion, the consensus of the participants on who should be allowed to perform emissions repairs was that the next emissions I/M program should continue to allow anyone to perform emissions repairs. The majority consensus of the participants was that the labor costs from all repair technicians

should count towards a cost-based waiver. The minority consensus of the participants was that only the labor costs from designated repair technicians should count towards a cost-based waiver.

7) Vehicle Registration

The Emissions I/M Summit participants discussed various ways to increase the convenience and enhance the integrity of the vehicle registration process. The possible options included allowing vehicle registrations at testing stations, discontinuing the use of paper inspection results as proof of passing inspections, addressing the growing problem of license plate or license plate tab sticker theft, and minimizing non-compliance with the emissions I/M program.

The consensus of the participants was that safety and/or emissions inspection stations should not provide vehicle registration services, either in person or via an internet terminal, as these services might increase motorist traffic to facilities that are not designed or staffed to handle vehicle registration functions and might decrease motorist traffic to existing facilities that are in business for this purpose.

The consensus of the participants was that safety and emissions inspection results should be transmitted electronically to the vehicle registration agency through a real-time system, so that motorists would not have to present paper inspection results to the registration agent. The consensus of the participants was that the theft of license plate tab stickers was a significant threat to the integrity of safety inspection and emissions I/M programs and that the vehicle registration agency should develop alternatives to the current license plate tab system. The consensus of the participants was that the vehicle registration agency and the safety inspection and emissions I/M programs should develop mechanisms to enhance motorist compliance. All of these registration measures will benefit Missouri motorists by decreasing the number of motorists who illegally bypass safety inspection and emissions I/M program requirements.

8) Emissions I/M Program Funding

The Emissions I/M Summit participants discussed whether motorists should pay emissions test fees to the testing providers, a portion of which would then be transmitted to the state, or whether the state should pay an emissions test fee to each testing provider from a source of funds. The consensus of the participants was that the next emissions I/M program should be funded by motorists paying the testing providers. The Emissions I/M Summit participants did not discuss an inspection cost structure, although there was some interest in securing Congestion Mitigation and Air Quality funds (reimbursement from federal funds for 80 percent of the cost of approved projects to the state) to keep the cost of the next emissions I/M program reasonable.

9) Emissions I/M Program Inspection Frequency

The Emissions I/M Summit participants discussed several possible inspection frequencies, including annual, biennial, transfer of ownership, mileage-based and

vehicle age-based intervals. The consensus of the participants was that returning to an annual test frequency was not possible and that a biennial test frequency was more convenient. The consensus of the participants was that requiring safety and emissions inspections prior to transfer of ownership of used vehicles should be continued, but that this requirement should only apply if the date of sale is more than six months after the most recent registration. The consensus of the participants was that mileage-based and vehicle age-based inspection intervals were not practical to implement or equitable, because an older vehicle that is driven many miles can be well-maintained and emit little pollution, while a newer vehicle that is driven few miles can be poorly maintained and emit excess pollution.

10) Emissions I/M Program Duration

The Emissions I/M Summit participants discussed three possible durations for the next emissions I/M program: September 2007 to September 2010; September 2007 to attainment of the eight-hour ozone standard, then include the emissions I/M program in the list of maintenance plan controls or contingency measures; or September 2007 to attainment of the eight-hour ozone standard, then re-evaluated annually.

The state is responsible for submitting a SIP to the EPA in June 2007 that commits the state to meet the eight-hour ozone standard by June 15, 2010. As a result, the consensus of the participants was that the next emissions I/M program should run for a minimum of three years, from September 2007 to September 2010. There was not a consensus of the participants regarding whether the emissions I/M program should be continued beyond that time period.

Summary of Emissions I/M Summit Recommendations

Below are the summarized decisions made by the Emissions I/M Summit participants for the design of comprehensive vehicle emissions I/M, safety inspection, and registration legislation. Majority consensus decisions are indicated with two asterisks. Minority consensus decisions are indicated with one asterisk.

- 1) OBD testing for 1996 and newer model year light-duty gasoline vehicles and 1997 and newer model year light-duty diesel vehicles. Allow for new OBD testing technologies, such as the OBD transponder, to maximize motorist convenience.
- 2) **Incorporate gas cap pressure, fuel leak, and anti-tampering testing and reporting into the statewide safety inspection program to offset the discontinuation of IM240 tailpipe testing for 1995 and older model year vehicles.
*Continue IM240 tailpipe testing for 1995 and older model year vehicles until the St. Louis area meets the eight-hour ozone standard and is reclassified as a maintenance area.
- 3) **Exempt the first four model years from the next emissions I/M program.
*Exempt the first two model years from the next emissions I/M program.

- Don't exempt hybrid electric vehicles from the next emissions I/M program.
- 4) Implement the next emissions I/M program consistently throughout the St. Louis ozone nonattainment area (the city of St. Louis and the counties of St. Louis, St. Charles, Jefferson, and Franklin).
 - 5) Allow decentralized test stations to offer safety inspections only, emissions inspections only, or safety and emissions inspections. Allow emissions test-only and emissions test-and-repair stations to compete on the open market.
 - 6) Discontinue remote sensing clean screening. If clean screening continues, motorists should pay for clean screening testing. Maintain remote sensing fleet analysis.
 - 7) **Waivers should be available to offset the burden of costly repairs for some motorists.
*Waivers should not be available as they discourage complete vehicle repairs and defeat the pollution prevention benefits of OBD testing.
 - 8) Allow anyone to perform emissions repairs.
**The labor costs from all repair technicians should count towards a cost-based waiver.
*Only the labor costs from designated repair technicians should count towards a cost-based waiver.
 - 9) Safety and/or emissions inspection stations should not provide vehicle registration services. Safety and emissions inspection results should be transmitted electronically to the vehicle registration agency through a real-time system.
 - 10) Alternatives should be developed to the current license plate tab system to address the growing problem of theft of license plate tab stickers. Develop ways to decrease the number of motorists who illegally bypass safety inspection and emissions I/M program requirements.
 - 11) Motorists should pay emissions test fees to the testing providers. The state should receive a portion of these test fees to pay for the oversight costs of the next emissions I/M program.
 - 12) Maintain biennial inspection frequency. Maintain transfer of ownership inspection requirements for used vehicles if the date of sale is more than six months after the most recent registration.
 - 13) The next emissions I/M program should run for a minimum of three years, from September 2007 to September 2010.

History of the Current Emissions I/M Program and Vehicle Emissions Testing in St. Louis

The Gateway Clean Air Program is the current vehicle emissions I/M program in the St. Louis area. It is operated by a private contractor, ESP Missouri, and overseen by the department's Air Pollution Control Program. In 1994, Senate Bill 590 provided the statutory authorization for the current emissions I/M program. Initial startup of the emissions I/M program was delayed due to various problems, including litigation and failure to obtain appropriations. Consequently, the emissions I/M program did not begin operations until 2000.

Vehicle emission testing has been in place in St. Louis since 1984 (except Franklin County, where it was instituted with the new emissions I/M program in 2000.) Under the old, pre-2000 system, the same repair shops that conducted safety inspections conducted emissions inspections. This allowed motorists a “one stop” approach. The old emissions I/M program used only idle testing (commonly called the **BAR90** test.) The cost of this BAR90 equipment was within the reach of many repair shops and thus, this type of testing lent itself to a “decentralized” system of testing. An updated version of this idle testing (BAR97) is still the best testing technology for some older vehicles and is the test used on all vehicles subject to the emissions I/M program in Franklin County. However, newer technologies were coming into place in the 1990’s that were not being used in the old system.

In addition to the problem of an increasingly antiquated testing method, a 1993 EPA audit report detailed many problems. EPA found that 84% of vehicle emissions inspections conducted during the audit had been done improperly.

St. Louis was also required to meet a certain level of pollution reduction for what was known as the “15% Rate of Progress Plan” for the 1-hour ozone SIP. Analyses of various control strategies showed an “enhanced”¹ vehicle emissions I/M program was the clear choice for obtaining the necessary reductions from a cost/benefit perspective.

The Gateway Clean Air Program began operations in 2000. In the first four years of the program (2000 to 2003), the enhanced emissions I/M program has been responsible for a 42.5 percent reduction in hydrocarbons, 43.3 percent reduction in carbon monoxide and a 23.3 percent reduction in oxides of nitrogen from subject vehicles². The contract with ESP Missouri expires September 1, 2007.

¹ The department and I/M stakeholders commonly refer to the current emissions inspection program in city of St. Louis and the counties of St. Louis, St. Charles, and Jefferson as an “enhanced” I/M program. This term reflects the legal designations in the Clean Air Act and regulations promulgated thereunder. Areas classified as “moderate” nonattainment are required to have a “basic” I/M program. Areas classified as serious, severe, or extreme are required to have an “enhanced” I/M program. Federal regulations give a “performance standard” for each type of program. In reality, the current I/M program is a “basic” I/M program that comes very close to meeting the “enhanced” I/M performance standard. The I/M program in Franklin County is considered a “basic” I/M program.

² “Gateway Clean Air Program 2004 Program Evaluation Report,” page 27. A copy of this report is available at the following Web page: <http://www.dnr.mo.gov/alpd/apcp/gcap/newrelease.htm>.

Definitions of Key Terms

1-hour ozone standard: the “old” ozone standard, based on a numerical level of 125 parts per billion (ppb) averaged over 1-hour. Violation of this standard occurred when a monitor recorded more than three exceedances of this level over a three year period.

8-hour ozone standard: the “new” ozone standard, promulgated by EPA in 1997. (Court challenges delayed implementation of the standard until recent years.) Violation of this standard occurs when the three year average of the fourth highest annual value reaches 85 ppb (for an 8-hour averaging period) or higher. Currently, the St. Louis area is the only portion of the state in violation of this standard.

BAR90: a type of vehicle emissions test conducted with a vehicle in idle mode. This test was used in the pre-2000 decentralized emissions I/M program in St. Louis.

Dynamometer testing: a type of vehicle test used in the current emissions I/M program for 1981 through 1995 model years. This testing involves collecting all of a vehicle’s exhaust pollutants using a dynamic test that simulates actual driving conditions (acceleration and deceleration). The vehicle is driven on a dual-roller machine called a dynamometer, or dyne. In St. Louis, this type of test is used in the entire ozone nonattainment area except Franklin County. It is also known as **IM240**.

Maintenance area: a former nonattainment area that has reached “attainment” with a National Ambient Air Quality Standard for the pollutant in question.

Maintenance plan: a state implementation plan submitted to EPA in conjunction with a redesignation request. A maintenance plan outlines how the state will *maintain* compliance with the national ambient air quality standard for which it is being redesignated.

Nonattainment area: an area not meeting the federal National Ambient Air Quality Standards for certain pollutants, including ozone. EPA makes the final determination of the geographic boundaries of a nonattainment area, with recommendations from the state. Most often, nonattainment areas are defined at the level of a county. Occasionally, EPA will designate a portion of a county, but the burden of proof on the states to show this is justified is very high. The designation is based on several criteria aimed at determining including monitoring data, emissions data, population and growth patterns.

Nonattainment classification: a classification system outlined in the Clean Air Act and federal regulations. Nonattainment classification is based on the severity of an area’s ozone pollution problem. The act outlines certain mandatory pollution control requirements based on classification. If an area fails to reach attainment for the ozone standard by the deadline prescribed by the Act, EPA must “bump up” the area to the next classification, which bring additional, stricter mandatory pollution control measures.

OBD II: On-Board Diagnostics II (OBD II) is a computer system installed on 1996 and newer cars and light duty trucks. The system monitors the vehicle's emissions control devices and drive train components. OBD II vehicle emissions testing involves downloading this information from the vehicle computer for purposes of diagnosis and repair.

Ozone season: the period of a calendar year when meteorological conditions tend to be conducive to ozone formation and when states are required to monitor for ozone. Official ozone season nationwide is April 1 through October 31. In St. Louis, exceedances of the standard are most often recorded from approximately mid-May through mid-September.